

1 **REMARKS**

2 Applicant respectfully requests reconsideration and allowance of the
3 subject application. Claims 1-81 are pending.

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5 **35 U.S.C. §112**

6 **Claims 8-11** are rejected under 35 U.S.C. §112, second paragraph, as being
7 indefinite for failing to particularly point out and distinctly claim the subject
8 matter in which applicant regards as the invention. Applicant respectfully
9 traverses the rejection.

10 The Office states:

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12 Regarding claim 8, lines 10-11, the recited limitation of “wherein the
13 aspect ratio of the first image differs from the aspect ratio of the base
14 layer” is confusing. How can the aspect ratio of the image derived
15 from its own source (i.e. the base layer) have different aspect ratio?

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17 Claim 8 states, in part, “extracting a first image from the base layer,
18 wherein the aspect ratio of the first image differs from the aspect ratio of the base
19 layer.” One way in which an image can be extracted from a base layer such that
20 the extracted image and the base layer have different aspect ratios is by extracting
21 a first image that comprises only a portion of the base layer. For example, if a
22 base layer is 1024 pixels wide and 768 pixels high, it has an aspect ratio of 4:3. If
23 an image is extracted from the base layer such that the image is 1024 pixels wide
24 and only 576 pixels high, then it has an aspect ratio of 16:9. Any number of
25 techniques may be used to extract the first image from the base layer. One
 technique is referred to as an “anamorphic squeeze” procedure that compresses the

1 image, in this example, vertically to cover only 576 pixels where the base layer
2 covers 768 pixels. Another technique for extracting the first image is to extract a
3 cropped portion of the base layer, so that a portion of the base layer is not included
4 in the extracted image. In the given example, the excluded portion of the base
5 layer is 1024 pixels wide and 192 pixels (768 pixels - 576 pixels) high.

6 Accordingly, a first image extracted from a base layer such that the first
7 image and the base layer have different aspect ratios, and thus the rejection of
8 claims 8-11 should be withdrawn.
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10 **35 U.S.C. §102**

11 **Claims 1-7, 12-19, 21-30, 33, 36-40, 42-54, and 70-81** are rejected under
12 35 U.S.C. §102 as being anticipated by U.S. Patent No. 5,510,787 to Koster
13 (hereinafter, “Koster”). Applicant respectfully traverses the rejection.

14 The Applicant’s application describes encoding a source image using a
15 layered coding technique that generates multiple layers with different aspect
16 ratios. A base layer has one aspect ratio and represents a low-resolution portion of
17 the source image and an enhancement layer has a different aspect ratio and
18 represents a high-resolution portion of the source image. The base layer and
19 enhancement layer, when taken together, represent the source image.

20 Applicant’s application also describes decoding the encoded layers to
21 generate displayable images. For example, the base layer may have an aspect ratio
22 of 4:3 and when decoded, may be suitable for display by a conventional (low-
23 resolution) television. The enhancement layer may have, for example, an aspect
24 ratio of 16:9. The enhancement layer represents a high-resolution portion of the
25 source image. When decoded, the enhancement layer may be combined with the

1 decoded low-resolution base layer to create an image that is suitable for display by
2 a high-definition television.

3 **Claim 1 recites:**

4 A method of encoding a source image, the method comprising:
5 generating a base layer representing a low-resolution portion of the
source image, wherein the base layer has an associated aspect ratio;
and

6 generating an enhancement layer representing a high-resolution
portion of the source image, wherein the enhancement layer has an
associated aspect ratio, and wherein the aspect ratio associated with
the enhancement layer differs from the aspect ratio associated with
the base layer.

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10 Koster does not disclose this method. Koster describes a two-layer encoder
11 system for encoding a digital signal, resulting in a high-resolution HDTV signal or
12 a low-resolution signal that is appropriate for display using a conventional
13 television. The layer of the encoder that encodes the low-resolution signal also
14 receives user input (e.g., from a joystick) to determine which portion of the input
15 signal is to be encoded in low-resolution. The efficiency of traditional encoding
16 processes is enhanced in that the described system encodes the difference between
17 subsequent images within a signal.

18 Nowhere in Koster is there any discussion of “generating a base layer...and
19 generating an enhancement layer...wherein the aspect ratio associated with the
enhancement layer differs from the aspect ratio associated with the base layer”.

20 The Office states that Koster discloses “generating a base layer representing
21 a low-resolution portion of the source image wherein the base layer has an
22 associated aspect ratio, and a high-resolution portion of the source image wherein
23 the enhancement layer has an associated aspect ratio” in Figure 1 and column 3,
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1 lines 9+. While Koster discusses layered coding, it does not disclose that the base
2 and enhancement layers are generated such that they have differing aspect ratios.

3 Moreover, the Office does not address this feature of the claims. Nowhere
4 in the Action does the Office state how Koster describes generating two layers
5 with different aspect ratios from a source image. For these reasons, claim 1 is
6 allowable over Koster.

7 If the Office continues to hold that claim 1 is rejected under 35 U.S.C. §102,
8 Applicant respectfully requests that the Office point out specific language in the
9 reference that describes the generation of a base layer and the generation of an
10 enhancement layer wherein the aspect ratio associated with the enhancement layer
11 differs from the aspect ratio associated with the base layer, as recited in claim 1.

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13 **Claims 2-7, 12-19, and 76-77** are allowable based on their dependence on
14 claim 1. In addition, these claims recite features that, when combined with those
15 of claim 1, define methods not disclosed by Koster.

16 For example, dependent **claim 7** recites “generating the enhancement layer
17 includes subtracting a portion of the base layer from a corresponding portion of
18 the source image”. Koster does not describe the claimed feature.

19 Koster describes enhancing the efficiency of traditional encoding processes
20 by encoding the difference between subsequent images within a signal. Koster is
21 cited as disclosing subtracting a portion of the base layer from a corresponding
22 portion of the source image in column 9 lines 30+, with reference to unit 16 of fig.

23 1a. Koster, column 9, lines 29-35 states,

24
25 If the encoder means are adjusted with $x=1$, the first group of pels of
the preceding (first) picture is subtracted from the first group of pels

1 of the (second) picture to be coded by means of subtraction circuit
2 16. As a result, a section of the stored preceding, high-resolution
3 picture is used in order to predict a section of the new high-
4 resolution picture to be coded.

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Specifically, Koster discloses subtracting one high-resolution image from another high-resolution image, and coding the difference. Koster does not disclose generating a high-resolution portion of a source image by subtracting a low-resolution portion from the source image, as claimed. Accordingly, claim 7 is allowable for the reasons stated and by virtue of its dependence on allowable claim 1.

Dependent **claim 12** recites, “generating an enhancement layer includes high-pass filtering the source image”. Koster does not disclose high-pass filtering the source image to generate an enhancement layer.

If one were to compare the high-resolution signal generated by the Koster system with the claimed enhancement layer, Koster does not describe filtering of any type with regards to generating the high-resolution signal. Koster describes a “reduction means” that is described as including a filtering means and a subsampling means. The described reduction means is shown leading to the input of the second layer of the encoding system, which generates a low-resolution signal. Koster does not describe any type of filtering in generating a high-resolution signal.

The Office states that Koster discloses a filtering means in column 8, lines 21+. The Office states that, “using high-pass filter for generating the enhancement layer is an inherent future of the filtering means”.

1 Koster (column 7, lines 6-9) states, "The encoder shown in FIG. 1 is made
2 up of two layers. The first layer (10-21) codes signals on the basis of the highest
3 resolution and the second layer (30-41) codes signals on the basis of the lowest
4 resolution." Reduction means 2 (which is the cited "filtering" means) is shown as
5 providing input to the second layer, which codes the low-resolution signal.
6 Furthermore, there is nothing in Koster that defines the described filter as a
7 high-pass filter, as claimed. Accordingly, claim 12 is allowable.

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9 Dependent **claim 13** recites, "combining the base layer and the
10 enhancement layer into a single transport stream". Koster does not disclose the
11 recited claim limitations.

12 The Office states that this combining is shown in Koster in unit 6 of Fig
13 1A. Cited unit 6 is a multiplexer that receives several inputs from the two layers
14 of the encoder, but the Office has not cited where Koster describes combining a
15 base layer and enhancement layer as described in claim 1 into a single transport
16 stream as recited in claim 13. Accordingly, claim 13 is allowable.

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18 Dependent **claim 16** recites, "further including transmitting the base layer
19 to an image decoding system using a first transmission medium and transmitting
20 the enhancement layer to the image decoding system using a second transmission
21 medium". Koster does not disclose these additional limitations to the method
22 recited in claim 1.

23 Koster shows a two-layer encoding system that sends input to a multiplexer
24 that then sends input to a decoding system. Koster does not disclose transmitting a
25 base layer using a first transmission medium and transmitting an enhancement

1 layer using a second transmission medium, as claimed. Accordingly, and by
2 virtue of dependence on claim 1, claim 16 is allowable.

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4 Dependent **claim 17** recites, “further including transmitting the base layer
5 to an image decoding system using a first transmission format and transmitting the
6 enhancement layer to the image decoding system using a second transmission
7 format”. Koster does not disclose transmission using multiple transmission
8 formats.

9 The Office states, “Regarding claims 16, 17, and 39, limitations claimed
10 transmitting the base layer to an image decoding system using a first transmission
11 medium (reads on fig. 1a, and fig. 2) and transmitting the enhancement layer to the
12 image decoding system using a second transmission medium (reads on fig. 1b, and
13 fig. 2).”

14 The Office does not point to anything in Koster that describes transmitting
15 a base layer using a first transmission “format” and transmitting an enhancement
16 layer using a second transmission “format”, as claimed. Accordingly, and by
17 virtue of dependence on claim 1, claim 17 is allowable.

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1 **Claim 21** recites:

2 A method comprising:

3 decoding a first layer representing a low-resolution portion of an
4 encoded image, wherein the first layer has an associated aspect ratio;
5 and

6 decoding a second layer representing a high-resolution portion of the
7 encoded image, wherein the second layer has an associated aspect
8 ratio, and wherein the aspect ratio associated with the second layer
9 differs from the aspect ratio associate with the first layer.

10 Koster does not disclose this method.

11 Koster describes a decoder for decoding a digital signal coded by the
12 described encoder.

13 The Office sites Koster, figure 2 (unit 90) and the abstract, as describing the
14 decoding process claimed in claim 21. As described with reference to claim 1,
15 Koster does not specify that the low-resolution signal that can be generated by the
16 encoder has a different aspect ratio than the high-resolution signal that can be
17 generated. Furthermore, there is no language in the abstract, nor is it clear in
18 figure 2 that the cited decoder means (unit 90 of figure 2) decodes a first layer
19 with an associated aspect ratio and decodes a second layer with a “different”
20 aspect ratio, as claimed. Accordingly, claim 21 is allowable.

21 Claims 22-30, 33, and 78-79 are allowable by virtue of their dependence
22 on claim 21. In addition, these claims recite features that, when combined with
23 those of claim 21, define methods not disclosed by Koster.

24 For example, dependent **claim 28** recites, “further including
25 communicating the first layer to a low-resolution television”.

26 Koster describes encoding and decoding a digital signal. Koster does not
27 describe communicating data to a low-resolution television.

1 The Office states that Koster “discloses process of communicating input
2 signal going through the process of encoding and decoding and transport to the
3 display device or television” in figures 1 and 2 and in column 2, lines 60+.

4 Figures 1 and 2 show a two-level encoder, a multiplexer, and a decoder, but
5 do not show communication to a low-resolution television. Column 2, lines 60+
6 states:

7 The object of the invention is to provide a system of the type
8 mentioned in the preamble which codes and decodes more
9 efficiently in the case of the given, different tv standards.

10 For this purpose, the system according to the invention has the
11 characteristic that the encoder is provided with encoder means,
12 coupled to the input, for deriving a position code from the digital
13 signal, for comparing the position code with at least one adjustable
14 code, and for decoupling, subject to a comparison result, the second
15 encoder feedback means and the first encoder feedback means.”

16 This cited portion of Koster describes encoding and decoding a digital
17 signal, but does not describe communicating a first layer to a low-resolution
18 television, as claimed. Accordingly, and by virtue of dependence on claim 21,
19 claim 28 is allowable.

20 Dependent **claim 33** recites, “A method as recited in claim 21 wherein the
21 first layer is received at a first time and the second layer is received at a second
22 time.” Koster does not disclose this recited limitation.

23 The Office states that, “first layer received at a first time and second layer
24 received at a second time (reads on Fig. 1A, time base multiplexer 6).”

25 Unit 6 of Fig. 1A is labeled “Multiplexer”, and there is no indication, either
on the figure or in the text, that the multiplexer is a time-based multiplexer.

1 Accordingly, and by virtue of its dependence on claim 21, claim 33 is therefore
2 allowable.

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4 **Claim 36** is allowable for the same reasons stated with reference to claim 1.

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6 **Claims 37-40 and 80** are allowable by virtue of dependence on claim 36.
7 In addition, these claims recite factors that, when combined with those of claim
8 36, define methods not disclosed by Koster.

9 For example, dependent **claim 39** is also allowable for the same reasons
10 stated with reference to claim 16.

11 Dependent **claim 40** recites, “the base layer is transmitted using a first
12 transmission format and the enhancement layer is transmitted using a second
13 transmission format.” Koster does not disclose transmitting two layers using two
14 different transmission formats.

15 The Office states, “Regarding claim 40, base layer is transmitted using a
16 first transmission format (i.e. aspect ratio, col. 3, lines 14+) and the enhancement
17 layer is transmitted using a second transmission format (i.e. aspect ratio, col. 3,
18 lines 9+).”

19 Applicant respectfully disagrees with the Office’s equating “transmission
20 format” and “aspect ratio”. Claim 36 specifies that the base layer and the
21 enhancement layer have different aspect ratios. Claim 40, further specifies that the
22 two layers are transmitted using different transmission formats. The Office has
23 not shown that Koster describes a base layer and an enhancement layer with
24 different aspect ratios. Further, the Office has not shown that Koster describes

1 transmission of two layers with different aspect ratios using different transmission
2 formats, as claimed. Accordingly, claim 40 is allowable.

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4 **Claim 42** is allowable for the same reasons stated with reference to claim 1.

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6 **Claims 43-49** are allowable by virtue of dependence on claim 42. In
7 addition, these claims recite factors that, when combined with those of claim 42,
8 define apparatus not disclosed by Koster.

9 For example, dependent **claim 44** is also allowable for the same reasons
10 stated with reference to claim 12.

11 Dependent **claim 45** recites, "...the enhancement layer generator includes
12 an image extractor to extract a portion of the base layer and a differencing module
13 to subtract the extracted portion of the base layer from a corresponding portion of
14 the image." Koster does not disclose the claimed image extractor and differencing
15 module.

16 The Office cites Fig. 1A, subtraction circuit 16 and first data processing
17 means unit 10, as describing the claimed enhancement layer generator. Koster
18 describes the subtraction circuit 16 as being used to subtract a second image from
19 a first image where the first and second images are successive images in a digital
20 signal. Koster does not describe using the subtraction circuit 16 to subtract an
21 extracted portion of a base layer from a corresponding portion of an image in
22 generating an enhancement layer, as claimed. Accordingly, claim 45 is allowable.

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1 **Claim 50** is allowable for the same reasons stated with reference to
2 claim 21.
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4 **Claims 51- 54 and 81** are allowable by virtue of dependence on claim 50.
5 In addition, these claims recite features that, when combined with those of claim
6 50, define an apparatus not disclosed by Koster.

7 For example, dependent **claim 54** recites, “...further including a receiver
8 coupled to the base layer decoder and the enhancement layer decoder...” Koster
9 does not disclose such a receiver.

10 The Office states that the claimed receiver “reads on Fig. 2, receiver
11 decoder 90”. Unit 90 of Fig. 2 is labeled as “decoder means”. There is no
12 suggestion that the “decoder means” is a “receiver decoder”. Furthermore, the
13 claimed receiver is “coupled to” the base layer decoder and the enhancement layer
14 decoder, which implies that the receiver is not in and of itself the “decoder
15 means”. Accordingly, claim 54 is allowable.

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17 **Claim 70** is allowable for the same reasons stated with reference to claim 1.

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19 **Claims 71 and 72** are allowable by virtue of dependence on claim 70.

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21 **Claim 73** is allowable for the same reasons stated with reference to
22 claim 21.

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24 **Claims 74 and 75** are allowable by virtue of dependence on claim 73.

1 **35 U.S.C. §103**

2 **Claim 32** is rejected under 35 U.S.C. §103 as being unpatentable over U.S.
3 Patent No. 5,190,787 to Koster (hereinafter, “Koster”) in view of US Patent
4 Application No. 2002/0021412 to Goodhill et al. (hereinafter, “Goodhill”).
5 Applicant respectfully traverses the rejection.

6 Koster describes a two-layer encoder system for encoding a digital signal,
7 resulting in a high-resolution HDTV signal or a low-resolution signal that is
8 appropriate for display using a conventional television. The layer of the encoder
9 that encodes the low-resolution signal also receives user input (e.g., from a
10 joystick) to determine which portion of the input signal is to be encoded in low
11 resolution.

12 Goodhill “relates to motion picture film and, more particularly, a method of
13 making motion picture release-print film that provides an enhanced projected
14 image and lower film consumption.” (Goodhill, paragraph 0001.) Goodhill
15 describes an anamorphic process to squeeze (or stretch) a projected image to fit
16 the available space between film perforations.

17 **Claim 32** is dependent on claim 21, which recites, “...decoding a first layer
18 representing a low-resolution portion of an encoded image...; and decoding a
19 second layer representing a high-resolution portion of the encoded image...”

20 **Claim 32** recites “...further including correcting an anamorphic squeeze in
21 the first layer”.

22 Goodhill describes applying an image to film using a technique to
23 anamorphically squeeze the image. Combining the teachings of Goodhill and
24 Koster, as suggested, would not result in the claimed method that includes
25 “correcting” an anamorphic squeeze. Goodhill proposes anamorphically

1 squeezing an image to enhance a projected image and to lower film consumption.
2 Goodhill does not teach or suggest that there is any need to "correct" an
3 anamorphic squeeze, as is claimed. Accordingly, claim 32 is allowable.

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5 **Claims 20, 31, 34-35, 41, and 55-69** are rejected under 35 U.S.C. §103 as
6 being unpatentable over U.S. Patent No. 5,190,787 to Koster (hereinafter,
7 "Koster"). Applicant respectfully traverses the rejections.

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9 **Regarding claims 20, 35, 41, 55-58, 59, 61, 62, and 65,** these claims are
10 written in a format that defines a computer or memory that enables performance of
11 the steps claimed (or claimed in the base claims). The format of claiming a
12 computer-readable medium with instructions to perform certain steps or a
13 computer programmed to perform the steps was approved in *In re Beauregard*, 35
14 USPQ2d 1383 (Fed. Cir. 1995).

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16 **Claim 31** recites, "...the first layer is decoded from a physical medium and
17 the second layer is decoded from a received data stream."

18 **Claim 34** recites, "...the first layer is received from a fist media and the
19 second layer is received from a second media."

20 Koster describes decoding a digital signal received from a single
21 multiplexer. Koster does not teach or suggest decoding multiple layers received
22 from multiple media. Claims 31 and 34 are therefore allowable.

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1 **Claim 60** recites, "...generating a second layer includes comparing a
2 portion of the first layer with a corresponding portion of the source image."

3 The Office contends that this limitation is suggested in Koster, column 6,
4 lines 10+. Koster describes "comparing a position code with at least one
5 adjustable code", but does not teach or suggest comparing a first layer with a
6 corresponding portion of the source image to generate a second layer.
7 Accordingly, and by virtue of dependence on claim 55, claim 60 is allowable.

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9 **Claims 63 and 64** are allowable by virtue of dependence on claim 55.

10
11 **Conclusion**

12 All pending claims 1-81 are in condition for allowance. Applicant
13 respectfully requests reconsideration and prompt issuance of the subject
14 application. If any issues remain that prevent issuance of this application, the
15 Examiner is urged to contact the undersigned attorney before issuing a subsequent
16 Action.

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18 Respectfully Submitted,

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20 Dated: 7/25/02

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